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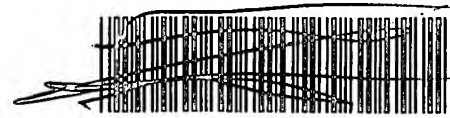
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#6



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RAW SEQUENCE LISTING DATE: 09/27/2002
PATENT APPLICATION: US/10/072,809A TIME: 13:07:43

Input Set : A:\pto.vsk.txt
Output Set: N:\CRF4\09272002\J072809A.raw

3 <110> APPLICANT: Anderson, Marilyn, A., Lay, Fung T., Heath, Robyn, L.
5 <120> TITLE OF INVENTION: Plant-derived molecules and genetic sequences encoding same
and uses
6 therefor
8 <130> FILE REFERENCE: 18-01
C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/072,809A
C--> 11 <141> CURRENT FILING DATE: 2002-09-12
13 <150> PRIOR APPLICATION NUMBER: USSN 60/267,271
14 <151> PRIOR FILING DATE: 2001-02-08
16 <160> NUMBER OF SEQ ID NOS: 61
18 <170> SOFTWARE: PatentIn version 3.0
20 <210> SEQ ID NO: 1
21 <211> LENGTH: 28
22 <212> TYPE: DNA
23 <213> ORGANISM: Artificial Sequence
25 <220> FEATURE:
26 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
28 <400> SEQUENCE: 1
29 ggaattccat atggctcgct ccttgtgc 28
31 <210> SEQ ID NO: 2
32 <211> LENGTH: 29
33 <212> TYPE: DNA
34 <213> ORGANISM: Artificial Sequence
36 <220> FEATURE:
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39 <400> SEQUENCE: 2
40 gcggatcctc agttatccat tatctcttc 29
42 <210> SEQ ID NO: 3
43 <211> LENGTH: 24
44 <212> TYPE: DNA
45 <213> ORGANISM: Artificial Sequence
47 <220> FEATURE:
48 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
50 <400> SEQUENCE: 3
51 ccggatccag agaatgcaaa acag 24
53 <210> SEQ ID NO: 4
54 <211> LENGTH: 26
55 <212> TYPE: DNA
56 <213> ORGANISM: Artificial Sequence
58 <220> FEATURE:
59 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
61 <400> SEQUENCE: 4
62 gggagctctt agttatccat tatctc 26
64 <210> SEQ ID NO: 5

RAW SEQUENCE LISTING

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66 <212> TYPE: DNA
67 <213> ORGANISM: Artificial Sequence
69 <220> FEATURE:
70 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
72 <400> SEQUENCE: 5
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75 <210> SEQ ID NO: 6
76 <211> LENGTH: 29
77 <212> TYPE: DNA
78 <213> ORGANISM: Artificial Sequence
80 <220> FEATURE:
81 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
83 <400> SEQUENCE: 6
84 gctctagatc agttatccat tatctcttc 29
86 <210> SEQ ID NO: 7
87 <211> LENGTH: 141
88 <212> TYPE: DNA
89 <213> ORGANISM: Nicotiana alata
91 <220> FEATURE:
92 <221> NAME/KEY: CDS
93 <222> LOCATION: (1)..(141)
95 <400> SEQUENCE: 7
96 aga gaa tgc aaa aca gaa agc aac aca ttt cct gga ata tgc att acc 48
97 Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr
98 1 5 10 15
100 aaa cca cca tgc aga aaa gct tgt atc agt gag aaa ttt act gat ggt 96
101 Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly
102 20 25 30
104 cat tgt agc aaa atc ctc aga agg tgc cta tgt act aag cca tgt 141
105 His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys
106 35 40 45
108 <210> SEQ ID NO: 8
109 <211> LENGTH: 47
110 <212> TYPE: PRT
111 <213> ORGANISM: Nicotiana alata
113 <400> SEQUENCE: 8
114 Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr
115 1 5 10 15
117 Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly
118 20 25 30
120 His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys
121 35 40 45
123 <210> SEQ ID NO: 9
124 <211> LENGTH: 75
125 <212> TYPE: DNA
126 <213> ORGANISM: Nicotiana alata
128 <220> FEATURE:
129 <221> NAME/KEY: CDS

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134 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met
135 1          5          10          15
137 ctc ttt gtt gcc tat gag gtg caa gct      75
138 Leu Phe Val Ala Tyr Glu Val Gln Ala
139          20          25
141 <210> SEQ ID NO: 10
142 <211> LENGTH: 25
143 <212> TYPE: PRT
144 <213> ORGANISM: Nicotiana alata
146 <400> SEQUENCE: 10
147 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met
148 1          5          10          15
150 Leu Phe Val Ala Tyr Glu Val Gln Ala
151          20          25
153 <210> SEQ ID NO: 11
154 <211> LENGTH: 99
155 <212> TYPE: DNA
156 <213> ORGANISM: Nicotiana alata
158 <220> FEATURE:
159 <221> NAME/KEY: CDS
160 <222> LOCATION: (1)..(99)
162 <400> SEQUENCE: 11
163 gtg ttt gat gag aag atg act aaa aca gga gct gaa att ttg gct gag      48
164 Val Phe Asp Glu Lys Met Thr Lys Thr Gly Ala Glu Ile Leu Ala Glu
165 1          5          10          15
167 gaa gca aaa act ttg gct gca gct ttg ctt gaa gaa gag ata atg gat      96
168 Glu Ala Lys Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp
169          20          25          30
171 aac      99
172 Asn
174 <210> SEQ ID NO: 12
175 <211> LENGTH: 33
176 <212> TYPE: PRT
177 <213> ORGANISM: Nicotiana alata
179 <400> SEQUENCE: 12
180 Val Phe Asp Glu Lys Met Thr Lys Thr Gly Ala Glu Ile Leu Ala Glu
181 1          5          10          15
183 Glu Ala Lys Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp
184          20          25          30
186 Asn
188 <210> SEQ ID NO: 13
189 <211> LENGTH: 216
190 <212> TYPE: DNA
191 <213> ORGANISM: Nicotiana alata
193 <220> FEATURE:
194 <221> NAME/KEY: CDS

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Input Set : A:\pto.vsk.txt

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195 <222> LOCATION: (1)..(216)
197 <400> SEQUENCE: 13
198 atg gct cgc tcc ttg tgc ttc atg gca ttt gct atc ttg gca agg atg      48
199 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met
200 1          5          10          15
202 ctc ttt gtt gcc tat gag gtg caa gct aga gaa tgc aaa aca gaa agc      96
203 Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser
204          20          25          30
206 aac aca ttt cct gga ata tgc att acc aaa cca cca tgc aga aaa gct      144
207 Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala
208          35          40          45
210 tgt atc agt gag aaa ttt act gat ggt cat tgt agc aaa atc ctc aga      192
211 Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg
212          50          55          60
214 agg tgc cta tgt act aag cca tgt      216
215 Arg Cys Leu Cys Thr Lys Pro Cys
216 65          70
218 <210> SEQ ID NO: 14
219 <211> LENGTH: 72
220 <212> TYPE: PRT
221 <213> ORGANISM: Nicotiana alata
223 <400> SEQUENCE: 14
224 Met Ala Arg Ser Leu Cys Phe Met Ala Phe Ala Ile Leu Ala Arg Met
225 1          5          10          15
227 Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser
228          20          25          30
230 Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala
231          35          40          45
233 Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg
234          50          55          60
236 Arg Cys Leu Cys Thr Lys Pro Cys
237 65          70
239 <210> SEQ ID NO: 15
240 <211> LENGTH: 240
241 <212> TYPE: DNA
242 <213> ORGANISM: Nicotiana alata
244 <220> FEATURE:
245 <221> NAME/KEY: CDS
246 <222> LOCATION: (1)..(240)
248 <400> SEQUENCE: 15
249 aga gaa tgc aaa aca gaa agc aac aca ttt cct gga ata tgc att acc      48
250 Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr
251 1          5          10          15
253 aaa cca cca tgc aga aaa gct tgt atc agt gag aaa ttt act gat ggt      96
254 Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly
255          20          25          30
257 cat tgt agc aaa atc ctc aga agg tgc cta tgt act aag cca tgt gtg      144
258 His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys Val
259          35          40          45

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261 ttt gat gag aag atg act aaa aca gga gct gaa att ttg gct gag gaa      192
262 Phe Asp Glu Lys Met Thr Lys Thr Gly Ala Glu Ile Leu Ala Glu Glu
263      50              55              60
265 gca aaa act ttg gct gca gct ttg ctt gaa gaa gag ata atg gat aac      240
266 Ala Lys Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp Asn
267 65              70              75              80
269 <210> SEQ ID NO: 16
270 <211> LENGTH: 80
271 <212> TYPE: PRT
272 <213> ORGANISM: Nicotiana alata
274 <400> SEQUENCE: 16
275 Arg Glu Cys Lys Thr Glu Ser Asn Thr Phe Pro Gly Ile Cys Ile Thr
276 1              5              10              15
278 Lys Pro Pro Cys Arg Lys Ala Cys Ile Ser Glu Lys Phe Thr Asp Gly
279      20              25              30
281 His Cys Ser Lys Ile Leu Arg Arg Cys Leu Cys Thr Lys Pro Cys Val
282      35              40              45
284 Phe Asp Glu Lys Met Thr Lys Thr Gly Ala Glu Ile Leu Ala Glu Glu
285      50              55              60
287 Ala Lys Thr Leu Ala Ala Ala Leu Leu Glu Glu Glu Ile Met Asp Asn
288 65              70              75              80
290 <210> SEQ ID NO: 17
291 <211> LENGTH: 541
292 <212> TYPE: DNA
293 <213> ORGANISM: Nicotiana alata
295 <220> FEATURE:
296 <221> NAME/KEY: CDS
297 <222> LOCATION: (1)..(318)
299 <400> SEQUENCE: 17
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302 1              5              10              15
304 ctc ttt gtt gcc tat gag gtg caa gct aga gaa tgc aaa aca gaa agc      96
305 Leu Phe Val Ala Tyr Glu Val Gln Ala Arg Glu Cys Lys Thr Glu Ser
306      20              25              30
308 aac aca ttt cct gga ata tgc att acc aaa cca cca tgc aga aaa gct      144
309 Asn Thr Phe Pro Gly Ile Cys Ile Thr Lys Pro Pro Cys Arg Lys Ala
310      35              40              45
312 tgt atc agt gag aaa ttt act gat ggt cat tgt agc aaa atc ctc aga      192
313 Cys Ile Ser Glu Lys Phe Thr Asp Gly His Cys Ser Lys Ile Leu Arg
314      50              55              60
316 agg tgc cta tgt act aag cca tgt gtg ttt gat gag aag atg act aaa      240
317 Arg Cys Leu Cys Thr Lys Pro Cys Val Phe Asp Glu Lys Met Thr Lys
318 65              70              75              80
320 aca gga gct gaa att ttg gct gag gaa gca aaa act ttg gct gca gct      288
321 Thr Gly Ala Glu Ile Leu Ala Glu Glu Ala Lys Thr Leu Ala Ala Ala
322      85              90              95
324 ttg ctt gaa gaa gag ata atg gat aac taa ttagagatta gaagaaatta      338
325 Leu Leu Glu Glu Glu Ile Met Asp Asn

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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 09/27/2002
PATENT APPLICATION: US/10/072,809A TIME: 13:07:44

Input Set : A:\pto.vsk.txt
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:58; Xaa Pos. 1,2,4,5,6,8,9,11,13,15,16,17,18,19,21,22,23,25,26,28,30
Seq#:58; Xaa Pos. 31,33,35,36,37,38,39,40,42,45,46
Seq#:59; Xaa Pos. 2,3,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23
Seq#:59; Xaa Pos. 24,25,26,27,28,29,30,32
Seq#:60; Xaa Pos. 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22
Seq#:60; Xaa Pos. 23,24,25,26,27,28,29,30,31,32,33
Seq#:61; Xaa Pos. 2,3,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23
Seq#:61; Xaa Pos. 24,25,26,27,28,29,30,32,33,34,36,37,38,40,41,43,45,47,48
Seq#:61; Xaa Pos. 49,50,51,53,54,55,57,58,60,62,63,65,67,68,69,70,71,72,74
Seq#:61; Xaa Pos. 77,78,80,81,82,83,84,85,86,87,88,89,90,91,92,93,94,95,96
Seq#:61; Xaa Pos. 97,98,99,100,101,102,103,104,105,106,107,108,109,110,111
Seq#:61; Xaa Pos. 112

VERIFICATION SUMMARY

DATE: 09/27/2002

PATENT APPLICATION: US/10/072,809A

TIME: 13:07:44

Input Set : A:\pto.vsk.txt

Output Set: N:\CRF4\09272002\J072809A.raw

L:10 M:270 C: Current Application Number differs, Replaced Current Application Number
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:1366 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58 after pos.:0
L:1369 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58 after pos.:16
L:1372 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58 after pos.:32
L:1526 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:0
L:1529 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:16
L:1703 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:60 after pos.:0
L:1706 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:60 after pos.:16
L:1709 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:60 after pos.:32
L:2187 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:0
L:2190 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:16
L:2193 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:32
L:2196 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:48
L:2199 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:64
L:2202 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:80
L:2205 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:96